

REMARKSI. Introduction

In response to the Office Action dated January 28, 2003, claims 1-6 have been amended, and new claims 7-16 have been added. Claims 1-16 remain in the application. Re-examination and re-consideration of the application, as amended, is requested.

II. Claim Amendments

Applicant's attorney has made amendments to the claims as indicated above. These amendments were made solely for the purpose of clarifying the language of the claims, and were not required for patentability or to distinguish the claims over the prior art.

III. New Claims

New dependent claims 7-16 have also been added. These claims are supported by the application as filed, e.g. at page 9, line 20 to page 12, line 27 and page 13, lines 25-27. No new matter is involved.

IV. Non-Art Rejections

On page (2) of the Office Action, claims 1-6 were rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Respecting claims 1 and 4-6, the Office Action asserts that the body of the claim fails to specify any structure to support the product claimed. Respecting claims 2 and 3, the Office Action asserts that it is unclear/vague as to where and how the temperature regulator is incorporated into the open loop controller and SGDBR.

In response, Applicant has amended claims 1-6 as indicated above to overcome these rejections. Withdrawal of the rejections is respectfully requested.

V. Prior Art Rejections

On page (2) of the Office Action, claims 1 and 4-6 were rejected under 35 U.S.C. §102(b) as being anticipated by Coldren, U.S. Patent No. 4,896,325 (Coldren). On page (3) of the Office Action, claims 2 and 3 were rejected under 35 U.S.C. §103(a) as being unpatentable over Coldren as

applied to Claim 1, and asserting that it is well known in the art that wavelength is a function of temperature relative to a SGDBR device and that a temperature regulator is used to stabilize the temperature of the SGDBR device.

Independent claim 1 is generally directed to an open loop controller for a sampled grating distributed Bragg reflector (SGDBR) laser, comprising a look up table of current settings, each entry in the table corresponding to a separate operating point of the SGDBR laser. Each entry in the look up table comprises a first mirror current setting, a second mirror current setting, a phase current setting and a gain current setting. The first mirror current setting, second mirror current setting, phase current setting, and gain current setting control at least one of a group comprising: an optical output power and an output wavelength of the SGDBR laser. When the controller is given a selected optical power and output wavelength, the controller selects an entry from the look up table to control the laser at substantially the selected optical power and output wavelength.

The cited reference does not teach or suggest these various elements of Applicant's independent claims.

Coldren describes an improvement for allowing selective tuning of the emitted beam over a broad bandwidth to a diode laser having an active section for creating a light beam by spontaneous emission over a bandwidth around some center frequency and for guiding and reflecting the light beam between a pair of mirrors bounding the active on respective ends thereof to create an emitted beam of laser light. The mirrors each have narrow, spaced reflective maxima with the spacing of the reflective maxima of respective ones of the mirrors being different whereby only one the reflective maxima of each of the mirrors can be in correspondence and thereby provide a low loss window at any time. The preferred mirrors each include a plurality of discontinuities to cause the narrow, spaced reflective maxima wherein the spacing of the discontinuities of one mirror is different from the spacing of the discontinuities of the other mirror so as to cause the wavelength spacing of the maxima to be different. Additionally, the preferred embodiment includes a vernier circuit operably connected to the mirrors for providing an electrical signal to the mirrors which will cause continuous tuning within a desired frequency band, an offset control circuit operably connected to the mirrors for providing a voltage signal to the mirrors which will shift the reflective maxima of the mirrors into alignment at a desired frequency mode, and a phase control circuit for adjusting the laser mode wavelength to be in correspondence with the low loss window. However, Coldren does

not teach or suggest a look up table of current settings, each entry in the table corresponding to a separate operating point of the SGDBR laser. Instead, Coldren teaches away from Applicant's invention because it describes a tuning process of  $V_{control}$  of the vernier control circuit is adjusted between 0 and some  $V_{max}$  to tune the laser. Specifically, at column 8, lines 22-34, Coldren teaches:

"By adjusting  $V_{control}$  between 0 and some  $V_{max}$  the vernier control circuitry 48 can tune the laser 38 within the crosshatched area indicated in the figure for no offset. Upon reaching  $V_{max}$ , a first offset is applied by the offset control circuitry 50 and  $V_{input}$  is once again restarted at 0. This causes the tuning to jump to the next maxima point and by again adjusting  $V_{control}$  between 0 and  $V_{max}$ , the vernier control circuitry 48 can tune the laser 38 within the cross-hatched area indicated in the figure for a first offset. The same procedure is followed for a second offset, et seq., through the tunable band of the laser 38."

This tuning process of Coldren where control voltage is adjusted across a range teaches away from a look up table of current settings as presently claimed.

In addition, Applicant notes that in making the §102 rejection, the Office Action merely asserts that "it is implied with Coldren that 'something' will control the setting of the controls to facilitate wavelength, gain, etc. control. (i.e. a human operator, etc.)". The Office Action further asserts that "it is also implied that the operator will have documentation to support operation of the device. The documentation will have information, i.e. table, that list the values of mirror currents gain current and phase current that operate the SGDBR device in a predictable manner, i.e. specific wavelength, etc." Applicant respectfully submits that what the Office Action asserts is "implied" is only speculation. A valid §102 rejection, however, requires that all elements of the claimed invention be taught by the cited reference; mere implication is insufficient.

Thus, Applicant submits that independent claim 1 is allowable over Coldren. Further, dependent claims 2-16 are submitted to be allowable over Coldren in the same manner, because they are dependent on independent claim 1, respectively, and thus contain all the limitations of the independent claims. In addition, dependent claims 2-16 recite additional novel elements not shown by Coldren.

VI. Conclusion

In view of the above, it is submitted that this application is now in good order for allowance and such allowance is respectfully solicited. Should the Examiner believe minor matters still remain that can be resolved in a telephone interview, the Examiner is urged to call Applicant's undersigned attorney.

Respectfully submitted,

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